Policy, Planning, and Research

WORKING PAPERS

Women in Development

Population and Human Resources
Department
The World Bank
May 1989
WPS 184

Women and Forestry
Operational Issues

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Involving women in forestry projects often makes the difference between achieving or not achieving project objectives. Moreover, involving women need not be costly and almost always produces a higher return on project investment.

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Women are major actors in forestry throughout the developing world. Women and children are the primary collectors of fuel and fodder for home consumption and for sale to urban markets. This alone gives women a major role in the management and conservation of renewable forest resources. When convinced of the utility and practicality of a forest improvement or management scheme, women can be a powerful lobby to persuade their entire household or community to invest the resources necessary to make the scheme work. Involving women in forestry projects often makes the difference between achieving or not achieving project objectives, particularly for the long-term sustainability of interventions.

Under a project in Senegal, in some villages both women and men were consulted about their species preferences. Women favored a mix of forage and shade species to go with the income-producing species most favored by men. Tree survival was much higher in these villages, because the women responsible for watering the trees (given the gender-specific division of labor) were more diligent than the women who had no influence on the choice of species.

Because of their traditional reliance on forestry resources, women are often the chief repositories of knowledge about the use and management of trees and other forest plants. They also make up much of the labor force in forest industries: nurseries, plantation establishment, logging, and wood processing. Nor are they exclusively subsistence-oriented: their agroforestry preferences include commercial fruits and (pole-generating) cash-crop trees as well as fuel and fodder species.

This paper provides operational guidelines intended to be taken on mission for guidance during field work:

- What information to get and issues to address during project preparation, preappraisal, and appraisal — as well as during project supervision, monitoring, and evaluation.
- How to analyze project costs and benefits with women in mind.
- How to design specific forestry interventions.

Designing interventions in the forestry sector with gender in mind is likely to change the scope and economic potential of investments. Where women's groups have taken an active role, the choice of species has been broader and has led to a greater diversity of products for sale or home use. Attention to the nutritional potential of forests can improve diets and thereby increase the long-term productivity of household members. Forest-based enterprises — both wood and nonwood — can be developed to place equal emphasis on women's roles in marketing and production, increasing employment and income.

This paper is a product of the Women in Development Division, Population and Human Resources Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Mila Villar, room S9-127, extension 33752.

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PREFACE

Women are key actors in the forestry sector throughout the developing world. Ensuring their direct involvement in forestry projects, both as beneficiaries and as participants, can: (a) ensure that projects achieve their immediate purposes and broader socio-economic goals, and (b) maximize returns on investments in this sector. But successful involvement of women in forestry projects requires a concerted and sustained effort by project designers and implementers.

It is clear, of course, that women cannot and should not be considered solely through the conceptual framework of gender and apart from the social and economic groups of which they are part and with which they identify (e.g., households, rural poor, fellow traders, or forest laborers). Nevertheless, this document focuses on women as they are defined by their gender, because of the problems that have been encountered in recognizing and addressing their gender-specific needs in sector and project work. It is expected that users of this document will need to consider gender issues within the perspective of overall socio-economic factors.

The objective of this document is operational: it is intended to be of practical use in evaluating women's involvement in this sector and in designing and implementing forestry projects that successfully involve women. Since a number of useful guidelines are available that provide a comprehensive view of the current information base and theoretical foundation on women's roles in forestry (see Box 1), that material is not reproduced here.

Box 1: AVAILABLE GUIDELINES ON WOMEN AND FORESTRY

Food and Agriculture Organization of the UN and Swedish International Development Authority, Restoring the Balance: Women and Forest Resources. FAO, Forestry Department, Rome, 1987

Forests, Trees and People, FAO, Forestry Department, Rome, 1985, Forestry Topics No. 2

Cecelski, Elizabeth, "The Rural Energy Crisis: Women's Work and Basic Needs, Perspectives and Approaches to Action," ILO World Employment Programme Research, Rural Employment Policy Research Programme, Geneva, 1985

Hoskins, Marilyn, "Rural Women, Forest Outputs, and Forest Products," discussion draft, FAO, Forestry Department, Rome, 1985

Hourihan, John, Guidelines for Women in Forestry Sector Projects, Asian Development Bank, Manila, 1988

Tropical Forestry Action Plan, World Resources Institute and FAO, Rome, 1987

Scott, Gloria, "Forestry Projects and Women," World Bank, Washington, D.C., 1980

Fortmann, Louise, ed., Whose Trees, Westview Press, Boulder, Colorado, 1988

This document intentionally takes a narrow focus to assist staff who need to know: (1) why women should be included in the design of forestry projects and of other projects containing substantial forestry components; and (2) how women can be included, given the existing political, social, administrative, managerial, financial and technical constraints.

It is hoped that the document will be useful both at headquarters during the preparatory stages of sector and/or project work and abroad as projects are identified, prepared, appraised, implemented, supervised and monitored.

The Annexes (I through V) are intended as "stand-alone" documents that can be taken on mission for operational guidance during field work.

WOMEN AND FORESTRY: OPERATIONAL ISSUES

A. INTRODUCTION: BANK GROUP LENDING FOR FORESTRY

1. Forestry activities make up a significant and increasing portion of Bank Group lending. From 1978 through 1987, the Bank Group financed 53 free-standing forestry projects, totaling US$ 1,293 million in loan/credit commitments. Of these, 27 were categorized as "social" (agro-forestry and community-based) and/or fuelwood generating projects; they accounted for a total of US$ 724 million of Bank Group commitments. A further US$ 160 million for forestry activities (excluding fodder production) were provided in the context of other agricultural projects (e.g., rural development, wasteland rehabilitation, watershed development, resettlement, irrigation command area development).

2. These projects cover the gamut of forestry activities intended to meet the needs for forest products, stabilize the environment, and promote sustainable land use and crop agriculture. The project-specific objectives may include, for instance:

- protection and management of existing woodlands;
- afforestation/rehabilitation of degraded forests and wastelands;
- stabilization of sand dunes and watersheds by establishing vegetative cover;
- promotion of private tree planting (both tree crops and agro-forestry) on farms and common property wastelands;
- improvement of community forest and fodder resources;
- energy conservation; and
- fodder production for livestock and dairy development.

3. In addition to these substantial direct investments in forestry, projects appraised between 1983 and 1987 included US$ 1,492 million for tree crop production and processing components. Although usually considered agricultural rather than forestry projects, tree crop projects often are important for supplying secondary forest products (fuel, fodder, etc.) and making sustainable productive use of marginal and/or fragile lands. (Agro-forestry projects themselves increasingly include tree crop species.)

4. The Bank Group's investments in forestry and related activities continue to increase. Proposed lending for forestry and watershed management programs in FY89 is US$ 285 million, and the average annual commitment planned for free-standing forestry projects for FY88-FY92 is US$ 345 million.

Box 2: WOMEN IN BANK-AIDED FORESTRY PROJECTS

In the project documents for the 22 social forestry projects appraised by the Bank from 1984 through 1987, women are explicitly mentioned as intended project beneficiaries or participants in only a single case (Ethiopia). Similarly, project documents mention women in only 4 of the 33 agriculture and rural development projects with forestry components appraised during the same period. The vast majority of these projects neither included specific female-targeted programs that needed to be monitored nor required pre-specified accounting of women's participation in judging overall project achievements.

B. SECTORAL BACKGROUND

Women's Roles in Forestry

5. Women are major actors in the forestry sector throughout the developing world. Most widely recognized is that women (and children) are the primary collectors of fuel and fodder for home consumption and for sale to urban markets. This alone gives women a major role in the management and conservation of these depletable forest resources. When convinced of the utility and practicality of a forestry improvement scheme, women can be a powerful lobby to persuade their entire household or community to invest the resources necessary to make the scheme work (see Case 1, Case 14 and Box 4).

Case 1

Under a project in Senegal, in some villages both women and men were consulted regarding their species preferences. Women favored a mix of forage and shade species to go with the income-producing species most favored by men. Tree survival was much higher in these villages, since the women responsible for watering them under the traditional gender-specific division of labor were more diligent than where they had no influence on the choice of species (Kumar, 1988).

6. Women's involvement in the forestry sector is not limited, however, to collecting fuel and fodder for household and subsistence farming needs. Because of their traditional reliance on forestry resources, women are often the chief repositories of knowledge concerning the use and management of trees and other forest plants. Women also comprise a large share of the labor force in forest industries -- nurseries, plantation establishment, logging and wood processing. Nor are women exclusively subsistence-oriented: their agro-forestry preferences include commercial fruits and (pole-generating) cash-crop trees as well as fuel and fodder species.

7. In many countries and environments (not only in tropical rain forest areas), non-wood forest products (generally called "minor forest products", despite their often major significance in the local, regional and even national economy) are a major source of income for the local people. Women often are the main collectors and users of these products -- plant fibers, medicinal plants and herbs, fruits and nuts, seeds used in condiments, both edible and industrially important oils and resins, and so forth. During agricultural crises -- such as drought or flooding -- women and children, particularly landless rural laborers deprived of wage work in crop agriculture, rely heavily on the gathering, processing and marketing of non-timber forest products (NTFP) to generate cash income. NTFP-based activities can in fact contribute more to national income than wood-based industries:

Box 3: PROJECTS WITH FORESTRY COMPONENTS REQUIRING ATTENTION TO WOMEN

- Social and Community Forestry
- Production Forestry
- Watershed Development/Management
- Wasteland Rehabilitation/Stabilization
- Irrigation Command Area Development
- Integrated Rural Development
- Resettlement/Transmigration
- Agriculture/Livestock with Agro-Forestry Components

in India, NTFP account for two fifths of the forest revenues and for about three fourths of net export earnings of forestry products (Kaur, 1988).

8. Until recently, recognition of women's involvement -- active and passive -- in the developing countries' forestry crisis has been incomplete and skewed. In many planners' minds, forest degradation has been equated with fuel and fodder shortages or with images of women walking ever farther in the search of fuelwood. The importance of other forest products to women and the very active role that women play in forest resource management have remained largely unrecognized and unspecified. Household fuel and fodder shortages are one result of forest degradation, but by no means the only one that affects women. Nor can women's critical concerns be satisfied by their passive involvement in forestry projects as mere "beneficiaries" -- recipients of fuel and fodder from male-initiated and -executed activities.

9. Women's roles in forestry in developing countries are diverse, and women take active roles in a variety of non-publicized instances. Unfortunately, the information base on gender tends to be very poor. As a result, many reports on the forestry sector and many recommendations for program interventions have overlooked a number of potential avenues for involving women. Moreover, there is a worrisome tendency to generalize unduly about women's roles in forestry based on a few location-specific examples. Much of the literature from environmentalists, aid agencies and NGOs, for instance, focusses on such dramatic examples as the Chipko movement in northern India in which women became highly politicized over the issue of forest depletion (see Box 4). While Chipko is an important movement, it reveals only one facet of the dynamics of women's involvement in forestry worldwide. It would be unrealistic to expect women everywhere to attempt to protect trees and forests as the Chipko women have. Chipko is unique -- because of the importance of the forests in the farming systems of the Himalayan foothills, and because of the strong position of women in that society.

Box 4: The Chipko Movement in India

The Chipko movement began in the Gharwal Himalayas in northern Uttar Pradesh (India) when women, concerned over excessive timber logging in the forests adjacent to their villages, hugged trees to prevent contractors from felling them and effectively stopped logging in the area. Both women and men have since become active in tree planting, establishing plantations and lobbying for forest conservation in the area. Women's organizations have become active forest protectors and have even been issued identity cards by the Forest Department for this role. Under the movement, eco-development camps have been held in Uttar Pradesh, and this model for environmental consciousness raising has now been adopted by NGOs in other parts of India as well.

10. Perhaps due to the poor data base on the economic roles women now play and could play in the forestry sector -- in forestry on public lands as well as in tree cropping within the farming system on private land -- women's issues have usually been regarded as welfare and equity concerns. As a result, concrete programs have centered on easing women's fuel and fodder collecting workload in the interest of their health and welfare.

11. Examples such as Chipko underline women's important, if not predominant, role as suppliers of fuel to their households and, hence, as managers and preservers of their forest environment. The equity concern, while important, obscures the point that involving women in forestry can be vital both to rural productivity and to achieving expected project returns. Improving women's quality of life (the equity or welfare concern) is certainly essential, but this argument for including women in forestry should not blind planners to the fact that women's active involvement can lead to sound forestry investment.

12. Even with regard to fuel and fodder availability and prevailing supply and collection patterns, the information available to planners is usually quite weak, leading to inadequate program and project design. Casual field observations by visitors, including project planners and outside experts, often lead to very erroneous conclusions concerning product availability at the community and household level (see Case 2). Moreover, there are conflicting and ambiguous theories and data about women and the fuel/fodder crisis. Data on time spent by women on collecting fuel and fodder vary widely even within regions and countries, and micro-level studies can be as misleading as macro-level generalizations. One study reports Indian women spending 18.2 hours per capita per week gathering fuel, another reports only 1.79 hrs/cap/wk (Cecelski, 1985). Some studies maintain that women in Nepal are increasingly burning cow dung due to the fuelwood scarcity, others dispute this claim, making it difficult for planners to draw program-applicable conclusions (Molnar, 1986).

Case 2

Where outsiders may perceive a surplus of wood, there may in fact be a serious shortage for the local community or individual household. In a village in Africa, where dead wood was visible all around, a woman potter was forced to abandon her craft because land rights forbade the collection of wood except from land owned by one's own family.

In another part of Africa, there are shortages of wood in villages that to outsiders visiting during the dry season seem to be abundantly supplied. Since the main source of wood is inaccessible during the rainy season, women must collect large quantities for stockpiling prior to the rainy season, and the abundance apparent to outsiders visiting at the "wrong" time is illusory (FAO, 1987).

13. Similarly, few solid data exist on the effects of the fuelwood and fodder shortage on women's (and household/farm) productivity, and generalizations derived from individual case studies may be wholly inappropriate. Are women preparing fewer warm meals as fuelwood supply diminishes? Are they burning more cow dung and crop residue to cope with the declining supply of fuelwood and, by reducing the application

of manure and compost to farm land, contributing to the decline in soil fertility and farm productivity? Are they abandoning income-generating activities because they need more time for fuel and fodder collection? Are they spending less time in agricultural production?

Box 5: WHEN FUEL AND FODDER ARE SCARCE

- women have to walk further to collect fuelwood and fodder and spend their time less productively
- children spend more time helping with fuel and fodder collection and less time in school
- women cook with dung or agricultural residue, and less farmyard manure and compost goes to fertilize the fields and maintain soil fertility
- women cook less often, and family members eat fewer warm meals (especially women and children)
- women switch to foodstuffs and ingredients that require less cooking, and there may be negative nutrition effects (e.g., fewer high-protein beans and pulses in the family diet)
- farm animals produce less dung because of their reduced and lower-quality diet, and less farmyard manure is available for fertilizing fields
- poor rural women devote more time to collecting fuelwood from forest areas for sale in urban areas
- fuelwood-dependent food processing and preservation activities decrease (e.g., smoking meats and fish, parboiling cereals or pulses, cooking animal diet supplements)
- wood-based income generating activities decrease or become less profitable (charcoal manufacture, cloth dying, silk reeling, salt processing)
- as total farm productivity decreases, men outmigrate and women have more work responsibilities and less time for their traditional income-generating activities, fuel collection, etc.

14. Almost everywhere, fully satisfactory answers to these questions remain elusive.[1] Reports from parts of Africa, for example, that women have sharply reduced their bean consumption due to their long cooking time and the associated high fuel requirements are confounded by studies suggesting that declining bean consumption in rural areas is in fact due to increased sales of beans for cash. Again, planners are limited to micro-level data that are inadequate to establish the crucial cause-and-effect linkages that would be more widely applicable in choosing among alternative project design options. Yet these issues are important. They may well affect population growth: where women rely on their children to help them cope with a work load that increases due to environmental degradation and resource depletion, this may be a disincentive to reducing family size.

15. The fuelwood and fodder shortage exists and, in many regions, is serious. But its effects on women often remain hidden. As is well known, women bear the brunt of general scarcity at the household level. In lean periods, women fast to make the food available to the household last longer. Yet the effects of such sacrifices are difficult to measure (Hoskins, 1983). When women need more time to collect increasingly scarce resources from increasingly more distant locations, their reduced productivity may not be readily apparent. Women may work longer hours and be ill more often -- but with improvements in rural health care, they are unlikely to die or to be sick continuously. Their weakening is therefore difficult to document and link to environmental

[1] One exception, concerning fuelwood, is based on surveys conducted as part of the UNDP/World Bank Energy Sector Management Assistance Program (ESMAP) support to project design in Africa and China.

degradation and resource depletion. Women may reduce or abandon their cash-generating activities -- growing fewer garden crops for sale or making fewer handicrafts -- and have less income to spend on their own and their children's needs. Children may have to shoulder heavier work loads and spend less time in school. Medicinal plants which women use for treating minor illnesses in their families may disappear (e.g., Smale, 1985).

Case 3

When trees were harvested from private lands in West Bengal, India, the lops and tops were expected to be retained for household fuel, while the timber would be sold by the village men for cash. The male smallholders cut trees in blocks, however, seeking to obtain a good price from a contractor and to receive a large lump sum of investible profits. Women obtained little fuel, since farms had limited storage space. Some lops and tops were stored, but most were given away or sold at minimal prices outside the farm.

16. In areas close to urban markets, the collection and sale of fuelwood is a major source of income for the rural poor -- mainly women -- and much of the time spent in fuelwood collection therefore goes in fact for income-generating purposes. Fuelwood has increasingly become such an important cash-income source for poor women, simply because they have so few other options for employment (e.g., Kaur, 1988).

Key Information Requirements

17. Sound planning requires a solid understanding of fuel and fodder supply and demand under local conditions. To date, most forestry programs have been planned and operated with the assumption that the supply and availability of these products to women would be increased by planting trees for subsistence needs on private land and fast-growing timber species in plantations on community and government land. This approach, experience has shown, was based on an inadequate understanding of the local fuel and fodder economies.

18. Farmers, including women, have a limited and site-specific interest in establishing and maintaining trees on their own private land exclusively for obtaining supplies of subsistence products. In the foothills of the Himalayas, where fuel, fodder and compost are major elements of the farming systems, farmers are interested in growing trees for subsistence needs because they have to compensate for the diminishing community and public forest resources. In many other areas, trees are included in the farming system mainly to generate cash income (from the sale of poles, fruits, etc.); fuel and fodder are merely by-products of such "tree farming". Traditionally, fodder trees are simply the unplanned result of a

Case 4

A village woodlot in Gujarat, India, was intended to supply villagers with forest products for subsistence needs and cash income. Species planted included acacia for seed pods, fodder and fuel, some fruit trees, and pole species. Since women (and male smallholders) were left out of both planning and management, tree spacing was not appropriate for maximizing fruit production, most of the fuelwood produced was sold to outside markets, and seed pods were auctioned so that local women could not gather them to feed to their own cattle (Molnar, 1986).

"passive" land use practice which allows seedlings to take root, rather than a planned and planted "crop" in which farmers, and time-constrained women, are willing to invest their time. Men and women are willing to take up private forestry activities, but only if it can be done with the labor available to them and/or if the cash and subsistence returns are attractive enough for them to divert labor from other activities (e.g., World Bank, 1988).

Case 5

Traditional land rights in one region of Kenya pose a serious constraint to tree planting by women. Women do not own land. Since ownership of trees on land is taken as evidence of ownership of the land, the men almost universally oppose the planting of trees, by women for fear that they will gain a claim to the land (van Domelan, 1987).

19. Public forests do not supply fuelwood billets or logs for local consumption. Such quality wood is sold for cash -- while twigs and leaves, lops and tops serve as the home fuel. Few forestry plantations provide women with fuel and fodder, not because of a lack of demand, but because they usually are timber-oriented forest department operations. When degraded forest land is targeted for rehabilitation or plantation, attention is rarely paid to the pre-project supply of traditional products to the local communities. Rather than seeking to expand the range of products and, thus, the likelihood that women will benefit,

Box 6: WHAT WOMEN MAY KNOW ABOUT FORESTRY THAT MEN MAY NOT

- how much scarcity is there for products women traditionally collect (fodder, fuel, medicinal plants, resins and dyes, fruits and berries, nuts and mushrooms, roots and leaves, fibers for baskets and other handicrafts)
- what are the burning qualities of various species
- how much time can they devote to tree watering and protection if this is their responsibility rather than men's; how far away from the village can the plantation site be and still allow them to do the work required at home and in the plantation
- what planning is required to ensure fruit, seed pods, other minor forest produce can be harvested from a plantation at times when women have time for collection and processing
- what rotational, seasonal or permanent closure rules have been established for traditional forest resources that are utilized primarily by women for fuel, fodder and other forest product collection
- how are small animals reared by women fed from fodder sources unutilized by men with seasonality unknown to men
- what value is there in planting shade trees near the house and/or at selected locations in the fields to improve the quality of the living and working space and increase productivity
- what land-use (soil and water conservation) practices women carry out on land they are responsible for (subsistence food crop land, home gardens, fields close to the homestead)
- what labor or capital constraints exist for female-headed households trying to participate in farm forestry programs being introduced in a project area

short-rotation timber species are usually given priority. Women's lot is further aggravated where they lack legal access to land on which trees are grown or traditional rights to the produce grown (e.g., Fortmann, ed., 1988).

20. In most rural societies, women are major repositories of essential knowledge concerning the range of forest products available in their area, the seasonality of product availability, and the uses of such products. Since women are rarely, if ever, consulted during program design and preparation, planning is almost always based solely on the limited information base of men.

21. The knowledge gap concerning women in forestry and forestry for women usually persists throughout the project's lifetime, since efforts to close it are rarely made during project implementation. Research to generate recommendations about alternative species, planting and management practices that would suit women's needs and constraints is hardly ever undertaken, be it by forest agencies or under broader agricultural research efforts. Data on sustained fodder yields from species regularly planted under social and agro-forestry programs, for instance, are scanty and inconclusive for most recommended spacings, because systematic trials and measurements have not been undertaken by the implementing agencies. As long as relevant forestry research is missing, the planning and implementation of programs for women will remain especially ineffective.

Box 7: TYPES OF NON-TIMBER (OR MINOR) FOREST PRODUCE COLLECTED BY WOMEN

Mauritania - Arid Region of Brakna (Smale, 1985)

Foods & fodder
gums, fruits, leaves and grasses, chemicals from trees and plants for butter preservatives, couscous seasonings, a wild grain (aze) used as animal fodder

Medicines, cosmetics, dyes, etc.
medicinal plants, henna and pods for cosmetic purposes, incense plants

Utensils, handicrafts, etc.
fronds, grasses, dyes, leather tannins, floormats

Papua New Guinea - Rainforests (IUCN, 1987)

Foods & fodder
condiments, grasses, fruits, nuts, gums, starch plants, salt yielding plants, alcoholic beverages, stimulants, oils

Medicines, Dyes, etc.
areca nuts, black paint glazes, resins, hunting poisons, fish intoxicants, insecticides, resins, bird bait, abortificants and contraceptives

Utensils, handicrafts, etc.
water containers, cooking and eating bowls, cooking tools, other tools, bows and arrows, rope, thatching materials, bark clothes, leaf capes, ceremonial masks & shields, jewelry, baskets, fiber net bags, necklaces, musical instruments

22. Issues concerning women in planning forestry interventions extend beyond the local fuelwood and fodder economy. Although, for instance, women provide a considerable portion of total labor in certain forest industries (e.g., nursery work, tree planting, logging and wood processing) programs generating wage employment do not usually provide women with equitable wage rates, adequate working conditions, or important support services such as day care for children. Rarely is attention paid to the effects of pesticide use on plantation laborers, including women.

Case 6

The development of better markets under a project in the Dominican Republic allowed men to sell palm trees planted on their farms for cash. Since men control land-use, women have little influence on decisions concerning the use of trees and tree products and failed to obtain fronds from these palms to sustain their traditional basket-making enterprises.

23. When interventions are implemented in forest areas which have traditionally supplied important non-timber forest products (NTFPs), little thought is given to the likelihood of increasing work loads for women (and children) due to the need to walk farther to collect the same amount of produce. Plantations could include more NTFP species along with timber species, even if these have longer growing cycles than is currently common in "reclamation" forestry. There is great scope to increase women's participation in NTFP marketing; they could be provided with credit for processing and marketing, given training in processing, or helped to organize to enter markets dominated by male traders. The issue of women's legal access to land and forests may need attention.

24. Paying more attention to income-generating opportunities for women in a forestry program is not frivolous. Raising the productivity of female farmers and farm laborers is essential for increasing farm and forestry productivity. When women have to spend more time collecting fuel and fodder, they have less time available to adhere to environmentally sound resource management practices. Moreover, women's strong interest in forest management is often the most effective means of interesting men in sustainable forest management (Kumar, 1988; and Case 7). Although commercial fuelwood contractors are major culprits, poor women's and men's sale of fuelwood to urban markets is an important causal factor in forest degradation in densely populated countries; in such settings, preventing further forest degradation requires the supply of alternative employment to such collectors as well as sound resource management.

Case 7

A project in Honduras failed to include women in credit programs for farmers to reforest and terrace lands destroyed by a hurricane. Women came to work anyway and proved more committed and successful than men. Because of the women's initiative men were eventually encouraged to devote time to this project (Fortmann and Rocheleau, 1985).

25. Two central conclusions emerge from the above: (a) more resources must be devoted to creating a credible information base on women's issues in forestry, and (b) more research is needed on

technologies that are relevant to women's roles. Since land and forest-product usage patterns and constraints are site-specific, this information will have to be gathered for a wide range of situations. For individual projects, information gathering about the project area itself must be a central component of design and implementation. For national or regional forest strategy formulation, a comprehensive examination of the existing data base and the gaps that need to be filled to make long-range policy decisions is a pressing concern, particularly regarding land-use decisions.

C. WOMEN IN FORESTRY PROJECTS

26. Forestry projects and forestry components in other projects are intended to meet a variety of objectives. These may include:

- increasing the production and supply of timber and wood products for internal consumption and/or export and for both commercial and industrial needs;

- improving agro-environmental conditions on degraded pasture lands and in watersheds through establishment of forest, tree and/or bush cover;

- improving the output and productivity of wood and minor forest produce processing industries;

- meeting subsistence needs for fuel, fodder, compost material and other forest products in the household economy through improved forest management and/or tree planting/farming;

- increasing rural incomes through farm- and agro-forestry; and

- improving the productivity of cultivated land by planting trees and tree crops on fields and/or field boundaries.

27. Where women are recognized as the primary users of fuelwood, fodder and a variety of other forest products, they can be expected to benefit significantly from appropriately designed and implemented forestry programs and to contribute significantly to proper forest management. In some cases, where women's decision-making role in conserving forest resources through controlled or rotational harvesting has been recognized, project staff have attempted to consult women on afforestation or forest resource management decisions. Far too often, however, project designers have simply assumed that women would

Case 8

A Machakos-based agro-forestry project in Kenya required women to collect and transport water for seedlings in the nurseries. When a water shortage forced the women to fetch the water from a river 2.5 km away, they refused to go. Project planners had made no attempt to consider the impact of the project on women's work load (FAO, 1987).

readily contribute their time and labor -- without being consulted on the design, scope and utility of planned project activities. Under a number of projects in Africa and India, for example, women have been expected to hand-harvest fodder and stall-feed their animals (so as to protect tree plantations against damage from freely foraging animals) even though they do not necessarily have the time or the resources to do so (e.g., AFTEN, 1988; Kaur, 1988).

28. It is now increasingly recognized that forestry projects, especially those intended to supply fuelwood and other products needed primarily by women:

- will be considerably more effective, and have higher returns on investment, if women are more actively involved (see Box 8);
- may not achieve essential objectives unless adequate attention is paid to women's concerns and involvement (see Box 9);
- do not always and automatically benefit women (see Box 10); and
- can harm women if they are poorly planned (see Box 11).

29. Involving women directly in forestry programs is not easy. Some Bank-aided projects have included specific measures aimed at involving women, such as use of female extension staff or motivators, coordination of activities with local women's organizations, and female-targeted media programs. Few have succeeded, however, in actively involving women as participants or in ensuring that women benefit equally with men from project activities.

Case 9

In Nepal, women are traditionally responsible for watering trees and, at least near the homestead, protecting them against foraging livestock. In a village with a tree nursery, where women were not specially targeted to receive extension, mostly men took seedlings for planting around their homesteads. Most of the trees died -- because the women were not aware of the planting program.

30. There are many reasons. Few relevant data are available to project planners, in the country and in the Bank. Forest departments are traditionally more male-dominated and -oriented than other agencies with longer histories of extension service. Project officers tend to be preoccupied with many other pressing issues. Relatively few qualified women are available for crucial project planning and implementation tasks. Sometimes consideration of women is too peripheral to overall project objectives, or it comes too late in the project cycle. And there is a tendency to assume that addressing women's needs and evaluating women's involvement within a more general development context will be excessively time-consuming and costly.[1]

[1] See Virginia Kearns, Reporting on Women and Men in FAO-Assisted Forestry Projects, FAO, Forestry Department, Rome, 1985.

KEY ISSUES CONCERNING THE INVOLVEMENT OF WOMEN IN FORESTRY PROJECTS

Box 8: HOW PROJECTS CAN MAXIMIZE RETURNS ON INVESTMENT BY INVOLVING WOMEN

- If women's species and product preferences are taken into consideration, they will be more likely to cooperate in pursuing overall project objectives (Case 1).
- Women are often a stronger lobby for the protection of common property resources, because they depend on them more heavily than men (Case 7, Case 14, Case 15).
- If activities are planned around women's schedules, they will have more time to devote to these (Case 8).
- Female-headed households (or households without adult males) may form a large percentage of households in the project area. If they can participate, project returns will increase (Case 10).
- Women can generate significant household income if raw materials for home-based industries are available (Case 17).
- Rural women have been shown to be better loan repayers than men. Ensuring for them access to institutional credit for planting or land improvement may have higher returns and may lead to more family income going directly to meeting subsistence needs and raising household living standards (Case 7).

Box 9: HOW PROJECT OBJECTIVES CAN FAIL TO BE ACHIEVED

- If women do not perceive project activities to be in their interest, they will not (or only reluctantly) provide labor for tree watering and tending and will not cooperate in recommended resource management practices such as rotational grazing, hand-cutting and stall-feeding, and restrictions on cutting (Case 8).
- If forest produce from plantations is not channeled to the women who need it, the pressure on existing forest resources from women gathering (and sometimes marketing) wood may increase rather than decrease (Case 4).
- If forest produce goes primarily to men's (cash-generating) enterprises and exacerbates shortages of products required by women for either subsistence needs or market-oriented activities, the net income accruing to the household may decline rather than increase (Case 3, Case 6).
- If women are responsible for key project activities such as nursery work, tree planting and tending, but do not receive the extension messages and requisite technical know-how, seedlings may not survive and thrive (Case 9).

Box 10: WHEN WOMEN PROBABLY FAIL TO BENEFIT

- When women's access to project activities and outputs is more limited than men's due to their inferior legal and/or traditional rights (Case 5, Case 6).
- When women are de facto heads of households in a patriarchal society and are confronting male-oriented public institutions (Case 10).
- When there is a conflict between the forest products and project benefits women need and want and those that men or the male-dominated communities prefer: e.g., fuelwood and fodder vs. lumber/cash, grazing areas vs. closed-canopy plantations (Case 16, Case 18).

Box 11: HOW WOMEN CAN BE HARMED

- If women are expected to provide their labor to an extent that conflicts in quantity and/or timing with their other work responsibilities (Case 8).
- If project activities interfere with women's supply of, or access to, formerly available facilities and/or products (Case 11).

31. There is, of course, no ready-made template for ensuring appropriate women's involvement. Project officers experienced in fuelwood, agro-forestry and community planting programs can attest to that. In large measure, the approach must be project-, institution- and site-specific. And unless specific resources are provided for this purpose, there is a real trade-off for project officers and team leaders in deciding what share of available resources should be allocated to women's issues and at the expense of which other important activity.

32. Some important lessons have been learned, however. Available evidence strongly suggests that two basic conclusions can be drawn:

> first, involving women often makes the difference between achieving and not achieving project objectives, and
>
> second, involving women need not be overly costly in terms of Bank and project staff time and financial resources and will, in virtually all situations, result in a project with higher returns on overall investment.

D. PLANNING FOR WOMEN'S INVOLVEMENT

33. Taking women's needs, functions, responsibilities and constraints adequately into account must begin at the planning stage. The first requirement is to identify properly the short- and long-term needs and demands of different users -- including different categories of women -- on the existing and planned forest resources and project facilities. This includes assessing the differences between the knowledge base of men and women regarding: (a) various forest projects, their uses, and their seasonal availability; (b) fodder sources and their availability; and (c) different aspects of the local farming and livestock systems as they are affected by forest production. It further includes assessing the potentially different utility accorded by men and women to different forest products and project components.

> Case 10
>
> There are many female heads of households in the Kathama watershed in Kenya, and their agro-forestry preferences differ from those of men. While the men generally prefer fodder crops protected by live fencing, these women emphasize field and boundary planting of fuel/fodder species near their homes. They also more often intercrop subsistence and cash crops, in an effort to adjust to the labor scarcity in their households.

34. The second requirement is to identify the various categories of users, participants and beneficiaries and the current and future group-specific uses, functions and benefits. Those likely to lose benefits as a result of project-induced land-use changes will need to be compensated by providing for them access to alternative resources or employment. Adequate information will be needed, thus, concerning such issues as gender-specific labor divisions and time allocations in the household and community, decision-making roles of different household members, and differential constraints on women's and men's access to services (e.g.,

extension, credit, training, etc.) that support proposed project activities. A serious shortcoming common to many projects is that, on the (very often faulty) assumption that women will automatically be major beneficiaries, particularly where fuelwood components are included, no mechanisms are provided to monitor and evaluate the extent to which women (and different categories of women) actually benefit from project activities nor, should this become necessary, to adjust activities to target women more effectively in the course of implementation.[1]

Case 11

In Burkina Faso, an area of degraded shrubs was cleared for planting 'productive' trees. Inadvertently, women lost a valuable source of fuelwood, shea nuts for cooking oil, and medicinal plants (Hoskins, 1983).

35. An essential aspect of this second requirement is the need to identify feasible and cost-effective ways of improving women's access to project facilities, services and benefits. Involving local women's groups and/or NGOs working with women at the grass-roots level has proven to be an effective approach in many instances. Where such groups do not yet exist, it may be possible (and advisable) to support the formation of women's groups in the community. If this is not feasible, alternative approaches need to be explored for improving women's access and helping women perform their forest resource management and their associated income-earning functions effectively. In many societies women are more easily reached by women, and deploying more female staff will therefore be advisable -- but may prove very difficult in the short run. Almost everywhere, it will be necessary to educating male staff about women's roles in forestry. In some instances, this may actually be more realistic and cost-effective in the short run than attempting a rapid increase in the deployment of female extension staff. Properly oriented and trained, male staff can effectively consider women's needs and contributions and reach women directly in field work.

Case 12

Experience in Nepal has shown that it may be more realistic and effective in the short term to focus on adequately sensitizing and training male foresters to understand women's roles in forestry than to try to find qualified women to employ as forest extension workers. With proper orientation and training, male staff can effectively consider women's needs and contributions.

36. A third major aspect of proper planning is the identification of gender-specific functions and responsibilities in forest resource management. This concerns such questions as: who is responsible for controlling foraging livestock; who ensures that rotational grazing systems are adhered to; who knows how much fodder is needed for stall-feeding and where it should be cut; who enforces restrictions on cutting and felling on common property land; and who decides upon species selection for new plantations?

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[1] Annex III illustrates an analytical tool for dealing with this problem.

37. Annex I (pp. 19-22) provides, in "checklist format", a more detailed listing of issues to be considered and information to be gathered and analyzed during project planning, preparation and appraisal. It suggests potential sources of information as well as methods and techniques to gather information. And it recommends a number of specific measures and approaches that are likely to help ensure that women are appropriately involved in project activities and benefit equitably from the planned interventions. (This Annex, as the others, is meant for use in the field.)

Case 13

A forestry project in Gujarat, India, included a component on fuel-efficient stoves. Stove popularization, dissemination and adaptation of the base model to different household sizes with different cooking needs required an extension effort that the Forest Department could not provide with its own staff. The NGO contracted for this purpose overextended itself and could not adequately monitor its program, and a number of stoves were poorly constructed by its female stove promoters. This project component has stalled and may be difficult to revive.

E. ENSURING WOMEN'S PARTICIPATION DURING IMPLEMENTATION

38. Proper planning and project preparation are vital -- but they do not ipso facto guarantee successful involvement of women. Efforts to ensure this need to be sustained and, if necessary, further refined and focussed during implementation. Moreover, even with the best of intentions and considerable effort, certain key questions may not have been answered during preparation and appraisal. Hence, the gathering and analysis of relevant information needs to be continued and expanded during project implementation so as to facilitate judging success or failure in reaching women. This, in turn, should then be used to decide upon adjusting project activities in response to the dynamics of user/beneficiary interaction with their forest resource endowment, with the project and with each other. It may concern the need to respond to unforeseen conflicts arising between men and women over project benefits, modifying project components to improve the access of women to project services and outputs, changing the mix of project outputs to match local women's evolving needs, etc.

Case 14

Local women's organizations (Mahila Mandals) and very strong in Himachal Pradesh, India. When a Bank-aided project began tree planting programs, these groups became very active in planting on both private and public land. Forest Department staff recognized their potential, and the Department now plans to increase greatly its employment of female village motivators, forest guards and higher-level officers.

39. Considerable amounts of data are routinely and regularly collected during project implementation. To the extent they are relevant, these data need to be collected and analyzed on a gender-disaggregated basis; if necessary, the scope of such routine data collection should be expanded to facilitate monitoring the involvement of women in the project. This will be considerably less costly in terms of staff time or finances than if this information has to be collected

Case 15

Women spontaneously formed a forest committee in a village in Nepal to manage a forest planted under a Bank-aided project. The women were eager to construct a drinking water supply system in their village -- their highest priority, and an important means to free some of their time for forest management work. Due to budgetary and administrative inflexibility, project staff were unable to help them obtain the needed materials, even though the women were willing to contribute free labor to the forest project in exchange. The women are now disillusioned about the project's commitment to meeting strongly felt local development needs rather than merely the project staff's own targets.

later through special surveys and studies. Village-level micro-planning exercises, as have been carried out by local forest department staff in Kenya and India, for instance, are excellent opportunities for collecting gender-specific information. Examples of issues on which gender-specific data can and should be regularly collected are: project-induced employment; wages; work specializations and their causes; skill acquisition; recipients of project inputs and services; species preferences and selections; entrepreneurial initiatives; income effects and utilization; targeting, reach and effectiveness of extension and training; membership of forest committees and users' groups; and departmental staffing patterns.

40. Some critical issues concerning women's participation and project impact on women cannot be adequately monitored and assessed on the basis of "normal" administrative data collection. Special surveys and studies may be needed, and provisions for such assessments should be made under the project. This concerns, in particular, project impact on various categories of women and their own perceptions of project impact. Specific issues that need monitoring in this regard include: changes in women's work loads and time allocations; changes in fuelwood and fodder availability and use; changes in family diets and/or cooking habits; changes in children's time use (notably school vs. work); conflicts between men's and women's interests in project outputs; expected and actual benefits from plantations on community and government land; utilization of fuelwood, poles and other products from private plantings (subsistence use vs. market sales); amounts and utilization of sale proceeds; and changes in supply and availability of wood and non-wood forest products to local women's industries.

41. Also likely to require special studies is the assessment of the extent and distribution of project "costs" and project-induced "losses" among various users and beneficiaries, notably between women and men (e.g., labor contributions to community activities, diminished supplies of traditional products, increased cash income for men at the expense of reduced availability of subsistence and/or income-generating products for women).

Case 16

A Ford Foundation pilot project in Andhra Pradesh, India, organized a group of women with dairy cattle in a fodder plantation scheme on community wasteland. When the plantation proved to be productive, men in the village began to file claims to this previously unwanted land, and the women are now hard pressed to protect their interests.

42. A third requirement is the monitoring of the needs, demands and constraints of different groups of users over time: Were these correctly identified and determined during project preparation? Are the intended beneficiaries receiving project benefits in the quantities and at the times envisaged during project planning and preparation? Are they participating in project activities as envisaged? Are women and men continuing to request the same products and services they did prior to project preparation/appraisal?

Case 17

Degraded forest land in the upper ranges of Sukomajri watershed in Haryana, India, was planted with widely spaced fodder, fuel and timber trees, intercropped with traditional thatch grass species, and protected by the villagers against cattle and cutting. Women were given loans to buy rope-making machines and are now harvesting these grasses regularly to generate significant cash income from rope-making.

43. Annex II (pp. 23-26) provides a detailed listing of issues to be considered and information to be gathered and analyzed during project implementation and supervision.

F. OPERATIONAL TOOLS

44. Annexes I through V are conceived as operational tools. The first two, presented in the form of "checklists", are intended to remind project planners, appraisers, implementors and evaluators of important issues and essential information needs. They set out practical recommendations on approaches and methods for obtaining relevant information and for incorporating women's needs, constraints, concerns and contributions. These reminders and recommendations reflect the main issues and concerns -- summarized in Boxes 8 through 11 on pg. 12 -- regarding appropriate consideration of women's issues and involvement of women in forestry sector operations. Annex I addresses information requirements and issues to be addressed during project planning and appraisal. Annex II deals with matters of importance during implementation, monitoring and supervision.

Case 18

A tree project in Cameroon introduced fodder trees as an intercrop to stabilize soils on land previously under slash-and-burn cultivation. Men liked the new system: it increased maize yields and reduced the work required for land management. Women did not like it: their groundnut production declined, and they had to provide more labor for pruning the trees (Tonge, 1988).

45. Annex III provides a model approach to assessing project costs and benefits which considers men and women as distinct and separate categories of beneficiaries. Using a Bank- and USAID-aided social forestry project in India, it (a) demonstrates ways for incorporating women as a distinct category of beneficiaries in project benefit and cost analysis, (b) shows that overall project returns need not be reduced through the incorporation of features that aim to ensure that women receive project benefits, and (c) indicates that involving women can increase the likelihood of achieving overall project objectives.

46. Annex IV contains a set of "decision aids" to help project staff identify different design features for various types of forestry projects and/or components. Five types of forestry interventions are specifically dealt with: private farm forestry; community woodlots; watershed management/wasteland rehabilitation; improved wood-burning devices; and forestry extension. For each of a number of aspects relevant to the project, specific design considerations and features are set out and potential sources of information are identified.

47. Annex V provides generic terms of reference for the investigation of gender issues in forestry. Deliberately wide-ranging and detailed, managers and mission leaders can draw on them in preparing project-specific terms of reference in each individual case.

48. The Select Bibliography, finally, provides a listing of literature of particular relevance and utility with respect to issues concerning women and forestry.

ANNEX I

INFORMATION TO OBTAIN AND ISSUES TO ADDRESS DURING PROJECT PREPARATION, PREAPPRAISAL AND APPRAISAL

A. Essential Information Requirements

1. Women's Roles in Forestry and Land Management

Identify and assess the functions and responsibilities of women in forestry and related activities in the project area, taking care to consider the various major categories of women (e.g., farm women in land-owing households, landless laborers, women engaged in forest-based formal and/or informal industries, female heads of households, school-age girls, women of ethnic or religious minorities, etc.). Consider in particular the roles of these different "types" of women:

- as **Collectors** of various types of forest products: for meeting subsistence needs (e.g., fuelwood, fodder, thatching) as well as for cash income generation through marketing (e.g., fuelwood, minor forest products) and market-oriented processing (e.g., fibers, fruits, other MFP);

- as **Producers/Entrepreneurs**: in forest-based activities/industries important to women for subsistence and/or market-oriented production (which activities, which products, which uses and/or markets, what marketing channels, what technology, what income, what time allocation?); in tree planting carried out at women's initiative (which species, which locations, which management practices?); in households they head due to widowhood, divorce, abandonment or husbands' temporary or seasonal out-migration (which agro-forestry preferences and practices, which special needs and constraints?); in households where they traditionally have responsibility for agricultural, livestock management and agro-forestry decisions;

- as **Laborers**: in nursery operations, in soil work and planting, in watering seedlings and established trees and grasses, in managing alley-crops and intercrops in agro-forestry systems, in other agricultural operations, in protecting trees against foraging animals and/or illicit lopping/felling, and in harvesting;

- as **Planners/Managers** deciding about a range of operations and product utilizations: when to lop or cut a family tree, when to harvest

Box 12: SOURCES OF INFORMATION

- Women's groups and organizations at the grassroots level
- Group interviews with village women
- Local women leaders
- Women nursery workers
- Female staff of public agencies posted or resident in the project area
- Studies by NGOs or researchers on women's situation in the project area

fruit, whether to harvest seed, whether to apply more compost to fields, when to cut fodder grass, whether to preserve a common land resource by rotational cutting or grazing, etc.

2. **Potential Gains and Losses to Women**

Identify and, to the extent possible, quantify the potential gains that will accrue to women and the likely losses they may have to bear as a result of the planned intervention. Specific issues to be considered include:

- **pre-project benefits likely to be foregone** by women and their households, with special attention to households headed by women: e.g., when common land is to be utilized for tree plantations; when gathering and sale of wood from government forests is eliminated as a source of income for poor households; when the utilization of minor forest products is expected or likely to become commercialized; or when changing gender-specific economic interests and incentives induced by project interventions are likely to deprive women of access to previously accessible resources;

- **work load** implications for women: e.g., the extent of added labor required of women of various socio-economic groups for project activities (such as watering, weeding, protection); longer distances to be walked for gathering fuel, fodder and other products previously obtained from land now brought under a different production and management regime; the effect of such additional labor requirements on women's time and labor allocation and on women's and household welfare (e.g., curtailing of time allocated to other tasks, increasing reliance on child labor);

- **probable gains** to women from planned interventions: e.g., increased availability of forestry products (but check for potential conflicts arising between men and women, between commercial and subsistence

Box 13: FAO RECOMMENDATIONS

- Explore gender issues through two-way communication
- Investigate the customs, taboos and time constraints
- Promote the role that women do and can play in forestry activities
- Exchange information with individuals at every level
- Support women's groups and encourage the formation of new ones
- Work together to provide access to land and trees
- Collaborate to make credit and income available to women
- Consult with women before introducing new technology or species

users); availability of new products for subsistence and/or market-oriented income generation; introduction of new income-earning activities based on forest products not previously available; generation of wage-labor opportunities (but check for potential distortions in male-female competition for new employment);

- differences and potential conflicts between probable gains and losses for women and those anticipated for men, households in general or the community as a whole: e.g., men's strong preference for timber species crowding out women's need for fuel and fodder trees; men's preference for selling trees en bloc conflicting with women's need for the domestic or home-industry use of by-products; or men's interest in cash-cropping of trees and their command over the labor of women in their household forcing women to reduce their time allocations to other family-care and/or income-earning tasks.

B. Special Planning Issues

1. Specific Measures to Ensure Women's Involvement

Consider and implement specific project/program components, including innovative measures which may not yet have been tried, to ensure women's involvement, utilize women's special stock of knowledge, capitalize on women's potential contributions, safeguard women's interests, and increase benefits to women. Examples include:

- inclusion of species that meet subsistence/survival needs and provide non-wood income-generating forest products;

- programs to ensure women's active participation in land improvement activities and nursery management;

- provision of training, credit, inputs and marketing support to women to engaged in home-based forest product industries;

- support to existing and/or for the formation of new women's groups which can undertake project tasks and/or facilitate individual or group participation of women in project-induced activities;

- explicit recognition of women as key agents when introducing improved land-use practices and provision of appropriately targeted extension and training services for women;

- identification and provision of appropriate incentives to women's participation as required for project success;

- identification of gender-specific constraints to women's participation and implementation of specific measures aimed at eliminating these;

- training women to facilitate their operation of nurseries.

2. Institutional Channels for Involving Women

Identify institutional channels for informing women about and involving them in project activities, such as:

- local women's groups at the grass-roots level;
- female extension staff of forestry and other government agencies;
- NGOs working with women in the project area (see Box 12).

3. Skill Development

Determine what skills women should have acquired by the end of the project period? Specify how this is to be brought about? Identify training needed for women and means to provide such training? Ascertain what is needed to ensure that a certain number of trained women are available by the end of the project period to be employed at various levels in the forest service and/or in other agencies concerned with land management and soil and water conservation?

Box 14: IDENTIFYING CHANNELS TO INFORM AND INVOLVE WOMEN

- What NGOs in the project area work with women and what are their target groups? (Ask large NGOs in the country and local officials about local NGOs; check directories compiled by women's and environmental groups for NGOs working with local women and/or involved in environmental work.)
- What local-level women's organizations exist and what is their membership, coverage, expertise, participation in local decision-making?
- What forestry/environmental activities have women been involved with the project area?
- What institutional credit programs exist for women in the project area?
- How well are women represented in the administrative structures, at higher levels in various agencies, at the district and sub-district administrative level, on elected councils, etc.? In which areas of concern are these women active discussants or decision-makers, and in which areas do they remain silent or defer to men?
- Which women are trained in forestry, resource management, soil and water conservation, on-farm agricultural methods?

ANNEX II

INFORMATION TO OBTAIN AND ISSUES TO ADDRESS DURING PROJECT SUPERVISION, MONITORING AND EVALUATION

1. Efforts to ensure successful involvement of women need to be sustained and, if necessary, further refined and focussed during implementation. This requires continuing and expanding the collection and analysis of relevant information to facilitate monitoring and evaluating the degree of success or failure in involving women. Information needs that should have been met before project start-up may have been satisfied only partly or not at all. Information on certain issues and developments will become available orly in the course of project implementation. And information obtained prior to project start-up may become outdated, if only as a result of project interventions, and will therefore need to be updated.

2. Key questions likely to require further and specific efforts at information gathering are those regarding women's roles in forestry, gender- and age-specific labor allocations within the household, and household decision-making patterns.

3. The information obtained should then be used to decide upon adjusting project activities in response to the dynamics of user interaction with their forest resource endowment, with the project and with each other. This may concern the need to respond to unforeseen conflicts arising between men and women over project benefits, modifying project components to improve the access of women to project services and outputs, changing the mix of project outputs to match local women's evolving needs, etc. Specifically, the information obtained should provide a basis, for example, for:

- discussions with men and women in the project communities regarding species selection, plantation establishment and management, and product marketing;
- facilitating adjustments in plantation models and harvesting patterns so as to safeguard women's requirements for fuel, fodder and other products needed to meet subsistence or cash-income needs;
- introducing additional species and/or credit and training programs to promote traditional or new forestry-based income-generating activities for women;
- identifying NGOs or women's groups that could be involved in tree planting, nursery operations, awareness campaigns, extension work, and other project activities; and
- curriculum development/modification for pre- and in-service forestry staff training and for farmers' and women's training.

4. Two primary means are available to obtain further information during project implementation, and both may need to be utilized:

(a) administrative data gathering routinely associated with project administration and monitoring, and

(b) special surveys and studies commissioned under the project.

Concurrent Information Gathering

5. A wide range of data is routinely and regularly collected during project implementation. To the extent they are relevant, these data need to be collected and analyzed on a gender-disaggregated basis. If necessary, the scope of such data collection should be expanded to facilitate monitoring women's project involvement and benefits. If properly planned for and organized, this will be considerably less costly in terms of staff time and finances than if this information has to be collected later through special surveys and studies.

6. Issues on which gender-specific data can and should be regularly collected include:

- employment generated (men/women/boys/girls);
- wage rates;
- work preferences and specializations and their causes;
- contributors of labor and other inputs to, and recipients of benefits from, community plantations;
- laborers for different operations in nurseries, private plantings;
- skill acquisition;
- recipients of project inputs and services (seedlings, credit, extension advice, training, fertilizer, pesticides);
- species preferences and selections (fruit, fodder, timber, fuel), in private plantings and community operations;
- number and ownership of private nurseries established;
- number, ownership and type of forest-based industrial activities initiated; size, employment;
- amount and disposition of income from private nurseries, private tree farming operations, forest-based industrial enterprises;
- men and women regularly contacted by extension staff;
- participants in farmers' training programs;

- membership of forest committees and forest users' groups;
- number of forestry extension staff, and number of staff trained by gender at all levels.

Special Surveys and Studies

7. Certain key issues concerning women's participation and project impact on women cannot be adequately monitored and assessed on the basis of "normal" administrative data collection. Special surveys and studies will be required, and appropriate provisions should be made for such studies and assessments under the project.

8. This concerns in particular project impact on women as well as their own perceptions of project impact. Data should be collected separately for women and men with different social and economic characteristics so as to permit meaningful impact assessment. Issues that need monitoring include:

- changes in women's daily and seasonal work loads and time allocations;
- changes in fuelwood and fodder availability and use;
- changes in family diets and/or cooking habits;
- changes in children's time use (notably school vs. work);
- conflicts between men's and women's interests in project outputs;
- expected and actual benefits from plantations on community and government land in terms of forest products (including fruits, seed pods, medicinal plants, grasses, fodder, leaves);
- utilization of fuelwood, poles and other products from private plantings (e.g., how much fuelwood is consumed by the household and for what period of time? How much is sold, at what price, and what happens with the proceeds?);
- changes in supply/availability of wood and other forest products to local industries operated by women.

9. A second area of concern likely to require special studies is the assessment of the extent and distribution of project "costs" and project-induced "losses" among various users and beneficiaries, notably between women and men. Examples are:

- labor contributions to community activities;
- diminished supplies or accessibility of forest products previously available from the project area;

- **increases in work load and time required to obtain certain products needed by women;**

- **scaling back or abandonment of women's income-earning activities due to reduced input and/or time availability;**

- **increased cash income for men at the expense of reduced subsistence and/or income-generating products for women.**

10. **A third requirement is the monitoring of the needs, demands and constraints of different categories of users over time:**

- Were user needs and constraints correctly identified and determined during project preparation?

- Are the expected beneficiaries receiving project inputs?

- Are they participating in project activities as envisaged?

- Are women and men continuing to demand the same products and services that they requested prior to project preparation?

ANNEX III

COST-BENEFIT ANALYSIS WITH WOMEN'S NEEDS IN MIND
(A Case from a Bank/USAID-Supported Project in India)

Introduction

1. Project planners often -- albeit falsely -- assume that involving women as direct beneficiaries or participants and devoting specific resources to achieve this is peripheral, if not detrimental, to the attainment of central project objectives and/or requires additional inputs at the expense of overall project focus and project returns. The case presented here refutes these assumptions by demonstrating that:

(a) economic returns are not reduced in projects that specifically ensure benefits to women, and

(b) directly involving women can improve the probability of projects meeting their essential objectives.

The Case

2. The National Social Forestry Project is being implemented in four Indian states with IDA and USAID assistance. The project aims to increase the supply of forest products to the rural population in the project areas and to nearby commercial and urban markets, to generate forest products and employment for all segments of the rural population, and to improve environmental conditions in the project areas. Project activities include farm forestry/agro-forestry, nursery establishment and seedling production, measures to promote private sector initiative in nursery and seedling production, and tree planting on degraded community and governmental forest lands.

3. Women are implicit target beneficiaries in the project -- as members of rural households and as individuals who play an essential role in the collection and/or use of forest products (e.g., fuelwood, minor forest produce, grasses and leaf fodder. Part of the aim of the project is to relieve the pressure on existing forest resources, by increasing the supply of needed subsistence forestry products to the local population from private and public non-forest lands.

Mid-Term Review and Evaluation

4. A mid-term evaluation of the project was recently conducted. It found, inter alia, that private farm forestry activities had considerable potential for generating farm income and supplying timber and fuelwood products for industrial, commercial and local market needs and that most were indeed realizing much of this potential. By contrast, environmental benefits and equitable distribution of social benefits were not as readily achieved through private farm forestry as had been assumed at project preparation and appraisal.

5. One problem concerning plantations on community land has been the lack of strong and broad-based community involvement in plantation planning and management. As a consequence, planting and management models have been overly timber oriented, and distribution/utilization systems have emphasized generating cash income for the local administrative body (the Panchayat), rather than helping to meet the varied subsistence needs of the community, particularly of the poor and women most dependent on community land resources.

6. Although the central role of women in the use of forestry products and the management of the forest resource base has long been recognized, the project had not specifically targeted women in its extension or plantation efforts, be it to obtain information about differences between their interests and those of men (even within the same household) or to involve women in plantation planning and management. One key assumption underlying project preparation and appraisal was that project plantations on common property land would generate products needed to meet poor women's subsistence and income-earning requirements and thereby decrease the amount of wood taken by such women from protected public forests. This assumption has proved false -- largely due to the absence of a community consensus on species selection and plantation management and to the emphasis on timber production for cash sale.

Recommended Modification of Plantation Models

7. In recognition of these weaknesses of the community plantation component and of the strong project performance in respect of those forest products now generated through private farm forestry activities, the mid-term review recommended a modified approach to community plantations. While continuing to produce the marketable timber and fuelwood that are of primary interest to the Panchayat, this modified planting and management model for plantations on common property and other public land specifically aims at meeting significant subsistence and cash income needs of the poorer members of the community (marginal farmers, landless households and women, i.e., those traditionally most dependent on the community land taken up for plantations). Women in particular are likely to derive considerably greater benefits from these community plantations in the form of grass, leaf fodder, fuel and minor forest products.

8. At the same time, the modified model has the additional important advantage of directly addressing longer-term environmental resource management concerns -- specifically the preservation of soil fertility in the woodlot and, by inference, key soil and water conservation aspects in the watershed in which the woodlot is located.

Model Comparisons

9. Table 1 compares three different planting and management models (species recommendations, management/harvesting regimes, and costs and benefits to different users/beneficiaries) for a "typical" community

woodlot in Rajasthan, one of the project states: first, as designed during project preparation and appraisal; second, as observed in the field during the mid-term review; and third, as recommended following the mid-term project review.

10. At appraisal, expected benefits were estimated for all types of plantations planned under the project. The cost-benefit models for community woodlots in Rajasthan estimated the relative returns (a) for the plantation as such, (b) to the local Panchayat, and (c) to the traditional users of these common lands, including women.

11. Similar cost-benefit analyses have now been carried out for the three scenarios set out in Table 1, using the costing and benefit estimation procedures applied at appraisal. This analysis was intended to demonstrate how women's needs can be specifically addressed in project design and factored into the cost-benefit analysis in a manner that will increase the flow of project benefits to them without jeopardizing overall project returns.

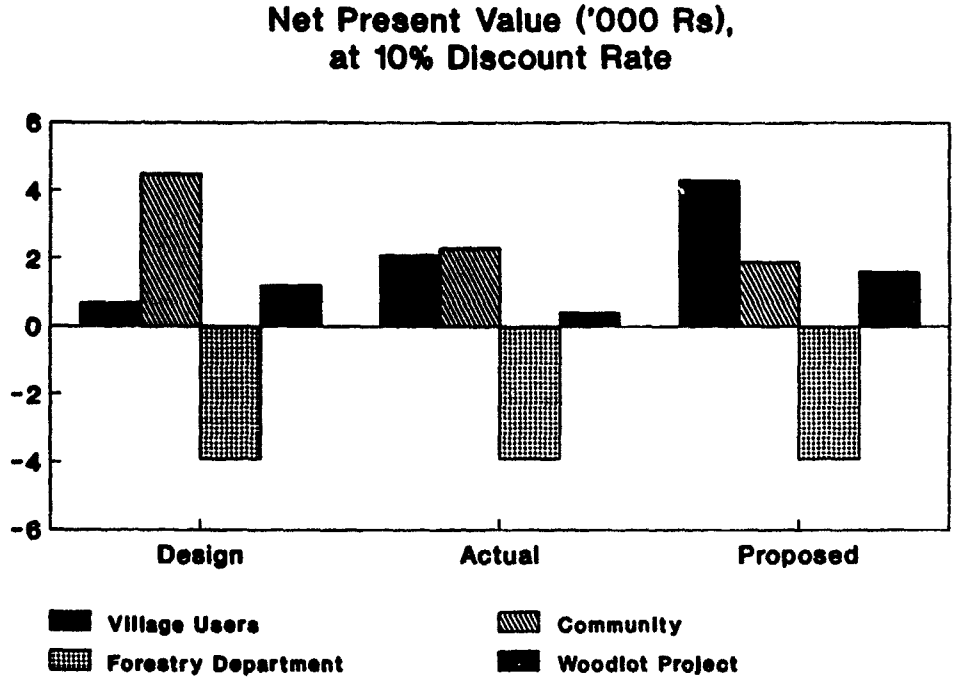
12. The cost-benefit estimates (at a discount rate of 10% per annum) for the original design of such a community woodlot were then compared, first, with the probable benefits as estimated on the basis of recent field impressions of actual experience and, second, with the expected benefits under the proposed new planting and management model. Figure 1 graphs the results. As the graph illustrates, the expected benefits to local users and women from the proposed alternative planting and management model exceed those they were expected to receive under the original project design as well as those they actually receive according to recent field observations -- yet the proposed new design will neither significantly reduce benefits to the Panchayat nor the returns to the plantation project as such.

Table 1: COMPARISON OF BENEFITS FROM A 1-HECTARE COMMUNITY WOODLOT IN RAJASTHAN (INDIA) OVER A THIRTY-YEAR CYCLE

	ORIGINAL DESIGN (Project Documents)	FIELD ASSESSMENT OF ACTUAL SITUATION	RECOMMENDED NEW MODEL (to improve environmental benefits and ensure steady benefit stream to users)
PLANTING AND MANAGEMENT MODEL	Community woodlot; Rainfed; 1,580 stems/ha	Community woodlot; Rainfed; 1,580 stems/ha	Community woodlot; Rainfed
SPECIES	Acacia nilotica; Acacia tortilis; Dalbergia sissoo; Fruit species.	Acacia nilotica; Acacia tortilis; Dalbergia sissoo; Fruit species.	Acacia nilotica; Acacia leucopholea or A. senegalensis (higher yield of quality fodder and of higher-value seed pods than A. nilotica); Dalbergia sissoo; Fruit species; Intercrops of leguminous herbs or castor; Intercrops of Prosopis juliflora or Cineraria shrubs for fuel and fodder; Preserving of different grass species for higher fodder production.
BENEFITS TO INDIVIDUAL USERS	Fallen wood: 0.2 mt/year from year 5; Grass: 0.2 mt/year from year 2; Lops and tops: 2.4 mt at harvest in years 11 and 21, 0.2 mt at thinning in year 15, and 2.8 mt at final harvest in year 31; Seed pods (Acacia): 0.6 mt/year in years 5 through 11, 15 through 21, and 25 through 31; Fruit: 0.2 mt/year from year 1.	Fallen wood: 0.2 mt/year from year 5; Grass: 0.5-0.8 mt/year in years 2 through 5, declining to 0.2 mt/year in years 6 through 10 due to closing of canopy, nil in timber harvest year 11, then repeat pattern in ten-year cycles; Lops and tops: 2.4 mt at harvest in years 11 and 21, and 2.8 mt at final harvest in year 31.	Fallen wood: 0.2 mt/year from year 5; Grass: 0.5-0.8 mt/year in years 2 through 5, declining to 0.2 mt/year in years 6 through 10 due to closing of canopy, nil in timber harvest year 11, then repeat pattern in ten-year cycles; harvested regularly during growing season; Lops and tops: 0.8 mt at harvest in years 11 and 21, and 1.1 mt at final harvest in year 31 (all from Acacia, lopped once per year for pods and two more times per year for fodder); Seed pods (Acacia): between 0.2 and 0.4 mt/year in years 5 through 11, 15 through 21, and 25 through 31 (quantity depending on lopping frequency; see last para. below); Fruit (unless auctioned): 0.2 mt/year from year 10.
BENEFITS TO PANCHAYAT	Fuelwood: 24 mt at harvests in years 11 and 21, 2 mt at thinning in year 15, and 34 mt at final harvest in year 31; Small timber: 4 m3 in years 11 and 21, 5 m3 at thinning in year 15, and 14 m3 at final harvest in year 31.	Fuelwood: 24 mt at harvests in years 11 and 21, 2 mt at thinning in year 15, and 34 mt at final harvest in year 31; Small timber: 4 m3 in years 11 and 21, 5 m3 at thinning in year 15, and 14 m3 at final harvest in year 31; Seed pods (Acacia): 0.6 mt/year in years 5 through 11, 15 through 21, and 25 through 31, auctioned annually with	Fuelwood: 8 mt at harvests in years 11 and 21, 0.6 mt at thinning in year 15, and 11 mt at final harvest in year 31, all from Acacia; 1.5 mt/year from year 2 through 11, then gradually declining to 0.3 mt/year from year 25 onward, all from regular lopping of Prosopis for fuel and fodder; Small timber: 11 m3 from Acacia in years 11 and 21, 5 m3 from D. sissoo thinning

		fodder loppings; Fruit: 0.2 mt/year from year 10, auctioned annually.	in year 15, and 21 m3 at final harvest of Acacia, D. sissoo and fruit trees in year 31; D. sissoo not harvested until year 31 to obtain higher-quality timber; Fruit (if auctioned): 0.2 mt/year from year 10.
COMMENTS	Villagers would collect fallen wood, seed pods, fruits and grasses, all free of charge. Panchayat would harvest wood and sell it, at concessional rate, in harvest years 11, 21 and 31 and at thinning in year 15. Tree survival estimated at 70%. Under community management, villagers would organize periodic cutting of seed pods and fodder from Acacia nilotica for stall-feeding; work would be done by village women.	Without community management, poor users (including women) are not likely to have much influence on Panchayat decisions. To ease product disposition and revenue generation (given potential conflicts of interest), the Panchayat is likely to auction both seed pods and fruits and use the proceeds for Panchayat activities. Women are unlikely to favor this, but without direct involvement in community decision-making, they are not likely to be able to suggest or insist upon an alternative method. In some cases, the Panchayat even auctions the grass (or half of it, the other half remaining for villagers' use) to generate more income.	Benefits depend on extent of community management -- but even without strong community management, far more intermediate yields are generated in the form of loppings of D. sissoo and Acacia. Annual lopping of Prosopis and other inter-crops also yield a continuous supply of fuel and/or fodder. Women, if consulted, will probably argue for maximizing the continuous flow of subsistence products as well as the final yield of timber. If women are active in the community decision-making body, such continuous harvesting will likely be a high priority of the Panchayat as well.
EXPECTED OUTCOMES		Closure of the area results in more grass production, but lack of community management and Panchayat preference for convenient revenue realization may prevent the poor and women from benefitting: grass is harvested at fixed times and in larger quantities, with more participation of wealthier villagers. Denied daily access to the area for grazing cattle, villagers have to change their livestock management practices. This can increase the pressure on nearby forest areas to compensate for the loss of access to traditional grazing land and increase the time women spend collecting fuel and fodder. With closure to grazing, poor women lose an important source of fuel: cattle no longer graze in this area, and poor women (who own few or no cattle) can customarily only collect dung from common property land.	Poor villagers benefit significantly more from grass production: wider tree spacing and regular lopping prevents canopy closing, allowing continuous grass growth and harvesting even when trees mature; hence, grass is not likely to be bought by the wealthy for bulk harvesting. Environmental benefits are greater: productivity will be improved and soil fertility maintained. The frequency of lopping Acacia is an issue: lopping once annually maximizes pod yield; three loppings per year yield fewer pods but more fodder. Preferences will differ between men and women and the poor and better-off: this matters in determining benefits to women vs. others. Solid data on forest product utilization and on women's roles in forestry and household and village decision-making are needed to carry out this analysis.

Figure 1
COMPARISON OF PROJECT BENEFITS: COMMUNITY WOODLOT (RAJASTHAN)



Design - Original project design
Actual - Current actual situation
Proposed - Proposed modified project design

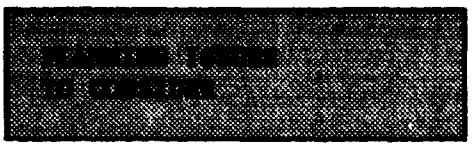
ANNEX IV

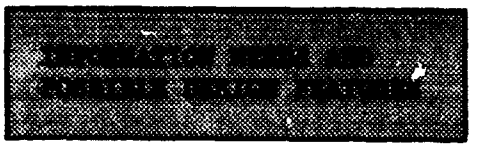
DESIGN GUIDELINES FOR SPECIFIC FORESTRY INTERVENTIONS

1. Private Tree Planting/Farm Forestry/Agro-Forestry
2. Community Woodlots/Plantations
3. Watershed Improvement/Wasteland Management
5. Forestry Extension
4. Improved Wood-Burning Devices

DOES YOUR PROJECT INVOLVE:

- **PRIVATE TREE PLANTING, FARM FORESTRY, AGRO-FORESTRY?**
- **FOREST NURSERIES (PUBLIC, PRIVATE)?**
- **SEEDLING DISTRIBUTION?**
- **ALLOCATION/REALLOCATION OF TREE TENURE, LAND OWNERSHIP OR USUFRUCT?**





Are women or men responsible for decisions concerning financial and labor investments in, and management and utilization of, trees, of family livestock? Are women or men responsible for family fuel supply, for livestock fodder, for grazing animals? → Collect data on men's, women's, boys' and girls' time allocation in the household and on the farm.

Are women expected to water, tend and protect seedlings that men raise in private nurseries and trees that men have planted? Are women convinced of the utility of these species, of their labor input into this work, of the program as a whole? Are women's work loads likely to increase or are other women's tasks likely to be curtailed or abandoned due to increased time needed for forestry work? → Ensure targeted extension for women, and advise them on ways to reallocate their time.

Do women want to plant different species (and at different locations) than men? Do they have the right to decide what to plant where (especially around/near the homestead)? → Collect information on men's and women's species preferences and on their tree/forest product uses by species and season, and consult with men and women about the species to be raised for distribution/sale/planting.

Do seedlings of the species women want (e.g. fodder, fuel and fruit species) cost more to produce than those men want? → Can project nurseries produce sufficient quantities of the species wanted by men and women?

→ If species wanted by women in large numbers have high production costs, not enough of these are likely to be raised in nurseries for free or subsidized distribution. Hence, seedlings should be priced to cover production costs, or private nurseries should be set up to produce the desired species.

Do women have rights to certain products, in certain quantities, at certain times, from multi-purpose species where men prefer other products? → Investigate women's rights to tree products.

→ Research tree management and harvesting practices that maximize yields of different products from multi-purpose species.

Are there trade-offs in selecting products to be obtained from species planted, and are some products more desired by men than by women and vice versa? → Investigate the economics of species mixtures to accommodate men's and women's needs.

→ Design extension messages accordingly.

→ Employ female motivators/extension staff.

→ Train male extension staff regarding women's roles, needs and potential contributions.

Are there women's groups in the project area that could be utilized as facilitators? → Involve women's groups in organizing planting and nursery establishment, seedling distribution, extension and credit programs.

Are there traditional women's work groups or women's labor pooling/sharing arrangements in the targeted communities? → Utilize women's work groups for cooperative planting efforts so the women can share the labor burden.

Are there female nursery workers? → Can they be provided with access to land, water, training and inputs to establish and operate private/cooperative nurseries?

Do women have access to land for establishing private/cooperative nurseries?
- If yes, can they be trained in nursery work and management and supported in setting up private/cooperative nurseries?
- If no, can the project arrange for leasing of land?

Do women have access to water for operating private/cooperative nurseries? → If not, can the project provide or arrange for a reliable source of water?

OBTAINING INFORMATION

AVAILABLE DATA:

- Types of trees preferred and raised, at which locations, and tree/forest products desired, by different members of the household.
- Access of men and women to extension media and extension services.

QUICK SURVEYS:

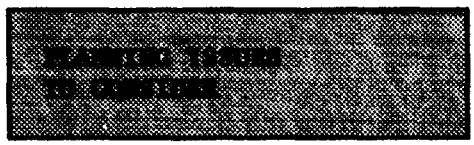
- Relative decision-making roles and responsibilities for farm and household activities.
- Sources of cash income to household and how women and men's earnings are spent.
- Knowledge and skills men and women have concerning tree and fodder growing/collection.

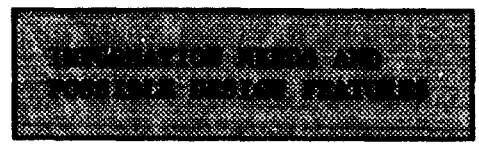
SPECIAL STUDIES:

- Relative time allocation in household and farm activities by men, women, and children.
- Number/percentage of households without adult males (permanently, seasonally) in the project area.
- Fuel and fodder collection patterns and impact on local forest and rangeland resource base.
- Sources of cash income to project area households of different socio-economic characteristics, and spending patterns for men's and women's cash incomes.
- Gender-specific differences in existing land rights.

DOES YOUR PROJECT INVOLVE:

- **COMMUNITY WOODLOTS?**
- **COMMUNITY FOREST PLANTATIONS?**





	Ascertain which products women collect? In which quantities? When? What these products used are for? What income is generated? Which women depend on these products?
Do women collect products that are important to them (nuts, fruits, fuel shrubs, fibers for local industries, grass) from the common property land that is to be cleared and/or planted and will they lose access to it?	Plan for management systems that yield benefits regularly (e.g., annual harvesting; understory of shrubs or legumes that can be cut more often; wider spacing of trees).
Do women rely on this land as an important foraging area for their animals?	Two years before plantation establishment, plant live hedge fences that women can lop for fodder and fuelwood.
Will women have to spend more time on fodder collection for stall-feeding or on grazing their livestock at more distant locations?	Plant and harvest the area in blocks so women retain access to some of the area at any given time.
Are women expected to switch to stall-feeding with fodder raised in initial plantation years?	Provide targeted extension advice explaining the advantages of the new planting and management system, so that women do not refuse to cooperate because they perceive it to be too labor-intensive and/or impractical.
Will children have to help their mothers cope with their a work load increased by having to switch to stall-feeding of livestock and will this affect their attendance at school?	Introduce labor-saving devices for other household activities that ease demand for children's labor.
Do women and men differ on species to be grown in community plantations?	Include a range of species that will meet the requirements of both men and women.
Are women likely to be the main laborers in plantation establishment?	
What tools are comfortable and efficient to use for women?	Plan for tools for pitting/land preparation work that can be used by women.
What is women's time availability over the seasons?	Adjust planting techniques and schedules to meet labor constraints or choose models that most easily fit these constraints.
Does tree planting conflict with women's time requirements for other essential activities?	
Are women's groups active in the area?	Mobilize such groups to take an active role in community management decision-making.
Do women/women's groups express strong interest in first obtaining other critical services/facilities (e.g., drinking water) before providing their labor or otherwise cooperating in project operations?	Can project resources be allocated for providing such services/facilities in return for obtaining the community's or women's groups' voluntary labor and cooperation?

OBTAINING INFORMATION

AVAILABLE DATA:

- Reports and monitoring data from other ongoing projects in the target area may describe women's current roles.
- Survey data on division of labor within the family farm/household and on school enrollment rates by age and gender.

QUICK SURVEYS:

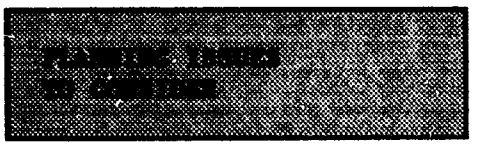
- Visit local NGOs and research institutes which have focused on these issues or know of relevant studies.
- Interview, at their job sites, groups of female plantation workers and/or female nursery workers about their household responsibilities and practices and their time/labor allocation.
- Assemble a group of women who have come to attend, or listen to, a community meeting afterwards and talk to them about their activities.
- Interview women "leaders" of the community in their homes.

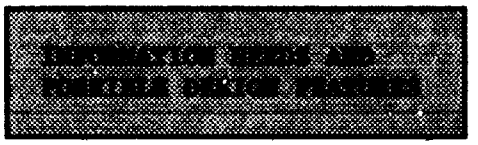
SPECIAL STUDIES:

- Monitor project benefits going to women, to facilitate design adjustments as needed.
- Conduct special studies on forestry sector and women, on forest-based industries, on rural energy, on livestock management and on issues where information is scarce and a problem may exist.

DOES YOUR PROJECT INVOLVE:

- **WATERSHED IMPROVEMENT/MANAGEMENT MEASURES ON DEGRADED PRIVATE LAND?**
- **PRIVATE WASTELAND REHABILITATION/MANAGEMENT?**





Are significant numbers of households without adult males (permanently or seasonally)? → Evaluate if women are less able to take up land improvement activities due to labor constraints, lack of capital/credit, exclusion of desired species from program.

Are there nomadic grazing groups where women are responsible for field and tree crops since the men spend more time in herding? → See that women as well as men have access to inputs, extension advice and credit programs.

→ Include women in training programs regarding new practices.

Do women control specific aspects of the farming system (land-use patterns, cash crops/subsistence crops, fodder crops, field boundary utilization, homestead planting, small livestock/large livestock, trees on homesteads/field boundaries)? → Target extension advice at women regarding all aspects of the farming system they control.

→ Interview women to ascertain how their preferences for types of trees, fodder, legumes, grasses differ from those of men for various aspects of the local farming system.

→ Discuss with women possible trade-offs between alternative strategies and credit needs or incentives.

Do women and men collect/use different products from forests and grasslands within the watershed? → Evaluate collection patterns; identify existence of traditional conservation practices (e.g., rotation) and/or harvesting techniques that are intended to preserve supply over time.

Does the project plan to introduce stall-feeding or other improved, but for women more time-consuming, land resource management practices? → Assess likely changes in family labor allocations. Is dairy development (market linkages?) possible to increase returns from improved livestock management in case women will lose time available for other productive/income generating activities.

Do different socio-economic groups use the same land areas? → Assess variations in women's roles in these groups.

Do women traditionally pool/share labor resources among households for work on individual holdings? → Investigate if women can be mobilized in groups to pool their labor for land improvement activities on individual holdings.

Are there women's groups in the target area that could be used as facilitators? → Involve women's groups in facilitating extension and credit programs reaching women.

OBTAINING INFORMATION

Available Data:

- Reports and monitoring data from other ongoing projects in the target area may describe women's current roles.
- Survey data on division of labor within the family farm/household and on school enrollment rates by age and gender.

Quick Surveys:

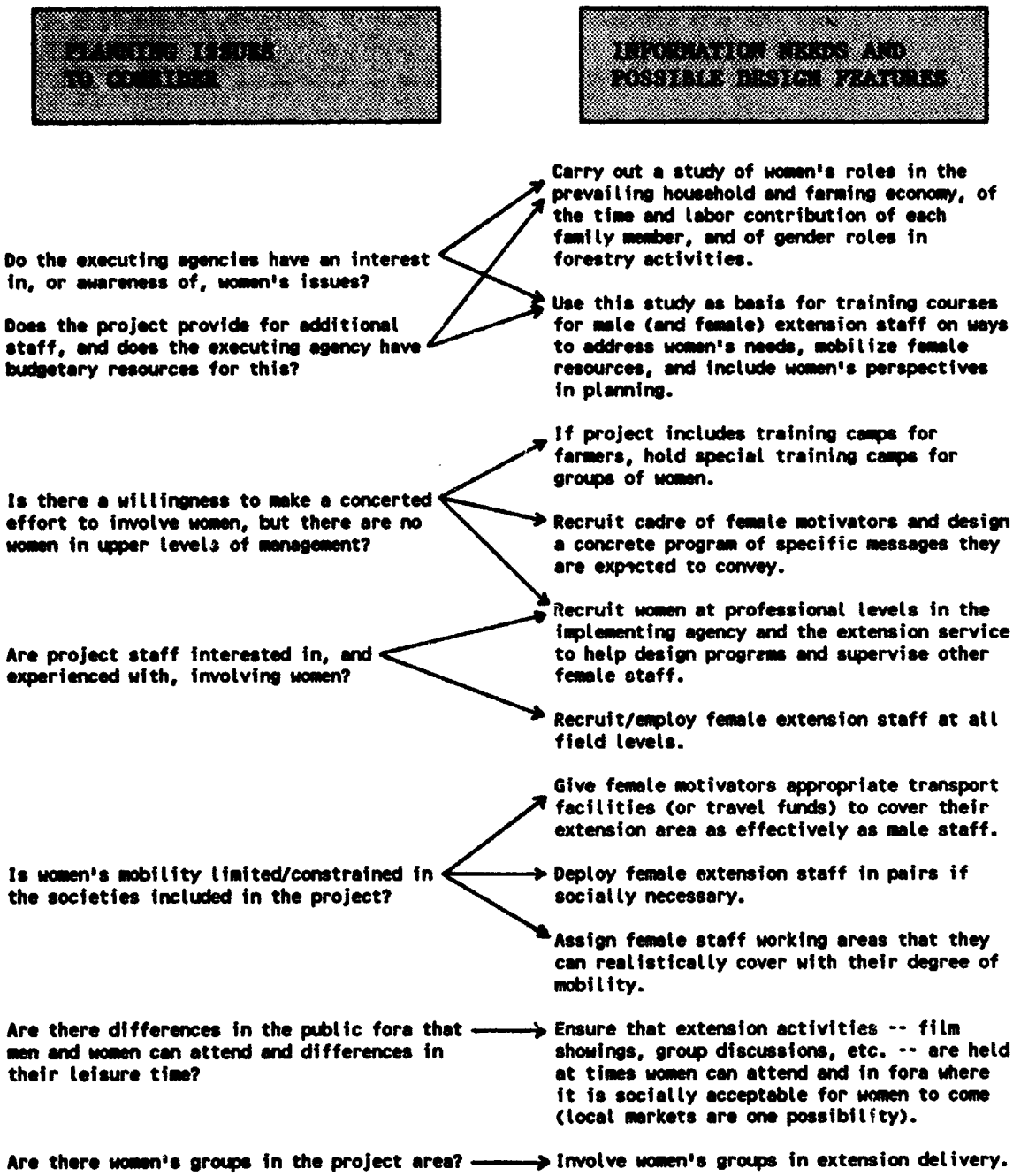
- Labor availability (male and female separately) in households of different socio-economic status, including specifically female-headed households and migrant households, with special regard to labor required for recommended land management practices.

Special Studies:

- Economics of land-use interventions from farmer's perspective, with site-specific economic analysis of farmer's perceived opportunity cost of labor, underemployment and farmer's perception of returns
- Prevailing uses of private and common lands for grazing, for fuel/fodder supply, supply of minor forest products, exercising ground for cattle, etc.
- Access to credit facilities and capital for men and women of different socio-economic status.

DOES YOUR PROJECT INVOLVE:

- FORESTRY EXTENSION ACTIVITIES?



OBTAINING INFORMATION

AVAILABLE DATA:

- Other projects in country or project area (e.g., M&E reports, studies and background documents)
- Ethnographic studies of project area that identify kinds of women with influence and mobility in society and gender-linked patterns of local decision making.

QUICK SURVEYS:

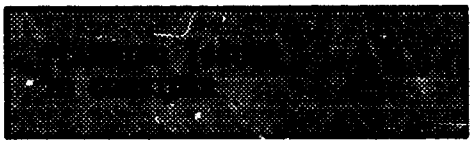
- Local women leaders, and members of local women's organizations, political fora for women.
- NGOs in the project area with experience working with women.

SPECIAL STUDIES:

- Review of informal women's work groups or organizations that could be mobilized in project.

DOES YOUR PROJECT INVOLVE:

- IMPROVED WOOD-BURNING DEVICES, COOKSTOVES OR CHARCOAL BURNERS?



How often do women cook meals and for what periods of time during day and evening?

What other activities do women undertake at the same time?

What fuels are used? What mixtures of fuels? How are these prepared?

Are stoves used for heating, for cooking, or for heating and cooking?

What kinds of food are prepared, and what are the cooking conditions required for their preparation?

Do women perceive cooking fuel to have a "cost" in terms of labor or cash and do they, therefore, perceive a value in the "savings" from an improved stove?

Make sure the improved models are adapted to local conditions of use and maintenance capabilities.

Make sure stove size, height and capacity are appropriate to women's cooking patterns and other activities that are carried out at the same time.

Evaluate cost efficiency of the improved device under local conditions--with women cooking with available fuels in usual mixture for normal types of meals and for different sizes of household.

Budget for adequate training and follow-up, including required number of trained promoters.

Prepare to modify designs if and as project monitoring reveals unexpected problems.

Make sure stove can be easily cleaned up by women if this is necessary.

Is the time required to cook with the new device acceptable to women users? → Investigate cooking pattern changes that lead to fuel saving without disrupting women's schedules.

What artisans or entrepreneurs are in the project area that could reproduce the model device? → Make sure program includes attention to a continuous supply of the device, including replacement parts, adequate raw materials. (If the device is low-cost and of local materials, it may have a short lifespan.)

What variation is there in the quality of raw materials (clay, mud, bricks, etc.) used to make the new devices?

Develop plans at the onset to make the intervention sustainable. Provide extension and training to potential private producers and marketers of the device.

Evaluate the marketability of the device.

OBTAINING INFORMATION

AVAILABLE DATA:

- Experience with other stove programs.
- Studies on the experience with other programs in the project area.
- Government agencies or NGOs with experience in these areas.

QUICK SURVEYS:

- Cost efficiency of the improved stoves under local conditions -- with women preparing their usual meals with commonly available and used fuels -- for different socio-economic groups and household sizes.
- Time required to cook traditional meals with the new stoves.

SPECIAL STUDIES:

- Research on better kitchen management techniques.
- Research on fuel savings using different (including traditional as well as newly recommended) mixtures/combinations of various traditionally and newly available fuels.

ANNEX V

GENERIC TERMS OF REFERENCE: STUDY OF GENDER ROLES IN FORESTRY

A. Objectives

1. Determine present systems of utilization of forest products within the community and the household by men, women and children.

2. Identify legal, social, cultural, physical, administrative, institutional and economic constraints on women's access to forest resources, forest products and/or proposed forestry interventions.

3. Identify appropriate means to incorporate women and women's concerns into project activities -- including, if warranted, by means of involving local NGOs and women's groups and organizations, targeting extension and training at women, or using public media to reach women.

B. Recommended Methodologies

1. Discussions with community leaders, village women, all adult members of individual households, local women's organizations, and extension staff of development programs targeted specifically at women as well as men.

2. Interviews with judges/magistrates, NGOs working in the area, and local officials (forestry and others) about women's access to forest products and recent conflicts over access to forest resources on public and community lands.

3. Semi-structured interviews with male and female members of a random sample of households in the project area.

4. Case studies of the situation in individual villages, using partipant observation techniques over a period of one to three months.

5. Mapping of village lands, both public and private, and of the type and quantity of products that men, women and children collect from these areas by season and over time. This permits interactive discussion of these resource maps with village men and women and identification of particular problems each of these user groups faces.

6. Small random surveys to obtain quantitative, statistically significant, information on a limited number of topics that can be rapidly analysed for project use.

C. Information To Be Collected

INFORMATION OF INTEREST	REASON FOR INQUIRY
1. Collect data on prevailing patterns of collection and utilization of fuel, fodder, timber, fibers, resins, oils, fruits, nuts, medicinal plants, herbs (including cooking condiments) and other forest products by men, women and children of different socio-economic characteristics. This should include: categories and numbers of collectors, processors and users; product types; product sources (both private and public lands); quantitative and seasonal availability; perceived change over time in availability; frequency of collection; time required for collection.	1. Men, and forest officials, often lack full knowledge of the range of forest products collected from different types of forests, from "wastelands", from community range- and grasslands, and from trees and shrubs on field boundaries. These may be collected only by certain categories of households, and middle-income farm families in the community may not be fully aware of the utility and importance of some products collected for home use or sale by poorer families.
2. Collect information regarding the end-use of these products. Are they gathered exclusively or predominantly for home use, or are they sold for cash income, either locally or in outside markets? If these products are becoming scarcer, are the users/collectors forced to find more expensive substitutes or to forego income and/or other benefits previously generated by collecting and processing of these products? Does women's perception of scarcity differ from men's for certain products? If so, for which products?	2. Even in areas of apparent degradation, products that are important to women and their households may be found/collected on private and public land; this may have significant implications for planners considering the introduction of tree plantations or the rehabilitation of degraded forests and/or grasslands in terms of species choices and/or plantation and management models that will maximize the output of particular products and affect the distribution of project benefits among users. If women are more concerned than men about the scarcity of fuelwood, they will be the more important target group for extension messages regarding the need for plantations and their protection.

INFORMATION OF INTEREST	REASONS FOR INQUIRY
3. Collect information regarding customary and formal rights of men and women of different socio-economic groups to products available from different categories of land: privately owned, community-owned, state-owned, etc. How do the customary and formal rights to land access and product utilization compare to the actual collection and utilization of these products by men and women? Do conflicts arise over their collection? How are such conflicts resolved? Are there discernible trends towards women's increased or decreased legal access to these products?	3. Utilization rights for trees on private land may be allocated differently than for field crops. Where tree ownership is reserved for men (or where ownership of trees implies claims on the ownership of land) women may not have any authority concerning the disposal of some tree products. Women's and men's access to the products of public and community land may differ. Increasing scarcity may be changing the way conflicts over the use of forest products are resolved by the village leadership and/or by administrative or judicial authorities. Plantations on community land may not, therefore, provide women with the products and benefits they need.
4. Determine what local systems of management exist and are used for non-private land. Do villagers, male or female, regulate the use of forests and grass- lands? For all products, or only for particular ones? What form does such community-level regula-tory action take: harvesting restrictions; permanent, seasonal or rotational closure of areas to cutting and/or grazing; restrictions on tool use?	4. Since there may be no formal decision-making groups or regular meetings, local management systems may be difficult for outsiders to detect and understand. This may necessitate the use of open-ended interviews to discover whether such systems exist or not (or have existed in the past). If they exist and are well understood, they can be easily (and with beneficial effect for the project) incorporated into the project.
5. Ascertain which, if any, local women's groups and/or NGOs can be utilized for channelling extension to women, operating nurseries, organizing planting and plantation management/protection activities. What legal constraints exist to utilizing such groups (e.g., lack of legal rights for women to common property resources, women's lack of influence in village decision-making processes) that the project should address?	5. When women become involved in planting on degraded areas, they may come into conflict with more influential men in the community as these areas become productive and there is competition for the products of these now productive areas. Women's groups may provide an effective means of channeling extension without requiring special resources for project implementing agencies and staff.

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